Multiline Hunt Group - C. O. Announcements (1078)

The delay announcement for queued calls on hunt group feature provides various options for handling incoming callers to a multiline hunt group that is subject to queuing. The basic queuing service provides only for audible ringing tone treatment for waiting callers. This feature allows timed audible ringing tone followed by a customer-selected (e.g., ESP-selected) combination of announcements separated by silence, music, or audible ringing tone. The announcements are standard call progress type announcements, not ESP-programmed announcements. Answer supervision is returned toward the calling party after timed audible tone when the first announcement begins.

Generic Name of ONA Service	Product Name	BSE or CNS
Multiline Hunt Group - C. O. Announcements	AM - Central Office Announcements	BSE
	BS - Multiline Hunt Queuing	BSE
	BS - Queuing (Access)	BSE
	NX - Announcements/UCD	BSE or CNS
	PB - Hunt Group - C.O. Announcements	BSE
	SWB - Recorded Announcements	BSE
	Qwest - Uniform Call Distribution	BSE

FEATURE OPERATION:

The delay announcement feature provides for automatic routing of incoming calls to multiline hunt groups to one or more pre-recorded announcements when the call is not serviced within a preset time interval.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS17

2. 1A ESS Switch:

   The following optional capabilities are available, depending upon switch/generic type, with the delay announcement feature: Fixed Delay announcement, Flexible First Delay announcement, Variable Length Delay announcement, Service After Delay Announcement, Delay Announcement Improved Billing, and Selective Delay Announcement.

   UCD customers using Delay Announcement must have queuing.

Customers can specify a length of time for incoming calls to be in queue before the Delay Announcement is activated.

Queuing can be zero seconds so that every caller receives an announcement.

Customers may have up to four different Delay Announcements.

Queuing timing begins after callers receive each announcement.

Announcement access trunks are required and must be traffic engineered for each customer.

Separate announcement access trunks are required for each Delay Announcement.

3. 5ESS Switch:

   The following options are available, depending upon switch/generic type, with the delay announcement feature: Initial Tone treatment, Initial Delay Interval after Delay Announcement, Delay Interval between Delay Announcements, Delay Announcement Length, and Flexible First Delay Announcement.

   There is a capability for four delay announcements in the 5ESS Switch. The 5ESS Switch has the capability to provide Inter delay (between announcements) timing, maximum of eight delays, tones and the number of cycles, up to 3, that a recording can play.

4. DMS-100 Switch:

   Multiline Hunting queuing functionality is available via Uniform Call Distribution (UCD) in the Northern Telecom Inc. switching machines. Currently, a UCD is assigned to a Meridian Digital Centrex environment. Where there are more incoming calls than agents to serve them, delay will be encountered before the calls are answered. There is a maximum of three delay announcements available to the ESP. A recorded announcement advising of the delay will be provided when a delay threshold is exceeded. The delay threshold is a customer option for the NTI UCD.

5. References:

   - GR-569 LSSGR: Multiline Hunt Service, FSD 01-02-0802 (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-TSY-000569 Issue 1 – no technical changes).

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Multiline Hunt Group - Individual Access To Each Port In Hunt Group (1079)

Individual access to each port in a hunt group allows each line in a multiline hunt group (including the lead line) to be assigned a separate non-hunt directory number.

Generic Name of ONA Service	Product Name	BSE or CNS
Multiline Hunt Group - Individual Access To Each Port In Hunt Group	AM - Non-Hunting Number For Use With Hunt Group Arrangement or UCD Arrangement	BSE
	BA - Non-Hunt Directory Numbers	BSE
	BS - Multiline Hunt Groups	BSE or CNS
	BS - Nonhunting Number for use with Hunt Group or UCD Arrangement (Access)	BSE
	NX - Hunt Groups	BSE or CNS
	PB - Nonhunting Number Arrangement	BSE
	SWB - Nonhunting Number Arrangement	BSE
	Qwest - Hunting	BSE

FEATURE OPERATION:

When the non-hunt directory number is dialed, a call is placed only to the designated number. If the number is busy, the call will not route to other members of the hunt group, and a busy signal is returned.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. Individual access to each port in a hunt group is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS25

2. In the 1A ESS switch this feature can be assigned with the following constraints:

   Each terminal number must be assigned its own Directory Number.

   Queuing of Lines will not be allowed.

   Stop Hunt Keys are not permitted.

3. In the DMS-100 this feature can be satisfied by using either Distributed Line Hunting or the Multiline Hunt Group Feature in conjunction with the Bridged Night Number feature. The Individual Access to Each Port in a Hunt Group feature is not compatible with the Universal Call Distribution hunting arrangement in the DMS-100.

4. Call Waiting - Terminating and Call Forwarding features should not be assigned to the non-hunt directory number.

5. References:

   - GR-569 LSSGR: Multiline Hunt Service, FSD 01-02-0802 (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-TSY-000569 Issue 1 – no technical changes).

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Multiline Hunt Group - Overflow (1080)

The maximum size of hunt groups is switching system dependent. This capability permits hunt groups to be large in size, within the limitations of the switching system serving the ESP. MLHG - Overflow allows a call destined for the ESP's hunt group to be routed to another telephone number within the same switching machine, but outside the hunt group. This capability requires an extra translation in order for the multiline hunt group overflow to be enabled in the switch.

Generic Name of ONA Service	Product Name	BSE or CNS
Multiline Hunt Group - Overflow	AM - Multiline Hunt Group Overflow	BSE
	BA - Multi-line Hunt Group	BSE
	BA – Hunt Group Arrangements	BSE
	BA – Hunt Group (Overflow Advance Arrangement)	BSE
	BS - Multiline Hunt Groups	BSE or CNS
	NX - Hunt Groups	BSE
	PB - Hunt Group Overflow	BSE
	Qwest - Hunting	BSE

FEATURE OPERATION:

In the 1A ESS and 5ESS machines, Call Forwarding Busy Line (CFBL) will be assigned to the MLHG to accomplish the overflow function. In the DMS 100, Line Hunt Overflow to a Route or Line Hunt Overflow to a Directory Number are utilized to provide this capability.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS17

2. 1A ESS and 5ESS Switches:

   For MLHG hunt lines, CFBL call forwarding occurs only when all lines are busy. The lines hunted depend on the hunting arrangement as follows:

   Regular Hunting, CFBL forwarding treatment is provided only when all lines hunted, including the last line in the hunt group, are found busy.

   Circular Hunting is similar to regular hunting except hunting does not end with the last line in a prearranged hunt group. In circular hunting, all lines in the hunt group are hunted for an incoming call. CFBL call forwarding treatment is provided only when all lines in a circular hunt group are searched and found busy.

3. DMS 100 Switch:

   The following overflow features can be assigned to Distributed Number Hunting, Multiline Hunting and Distributed Line Hunting:

   If all lines in the above listed hunt groups are busy, the overflow to a directory number (LOD) feature can be assigned to the hunt group. The LOD feature will cause hunting to continue to a specified directory number.

   If all lines in the above listed hunt groups are busy, the overflow to a route index (LOR) can be assigned to the hunt group. This will give the ESP the capability to hunt to a trunk group, announcement group, or private facilities that are accessed via a route index.

4. References:

   - GR-569 LSSGR: Multiline Hunt Service, FSD 01-02-0802 (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-TSY-000569 Issue 1 – no technical changes).

This service is associated with the Circuit Switched Line basic serving arrangement.

Multiline Hunt Group - Uniform Call Distribution Line Hunting (1081)

The Uniform Call Distribution line hunting arrangement allows for equal distribution of incoming calls to all terminal numbers within a hunt group.

Generic Name of ONA Service	Product Name	BSE or CNS
Multiline Hunt Group - Uniform Call Distribution Line Hunting	AM - Uniform Call Distribution	BSE
	BA - Uniform Call Distribution	BSE
	BS - Uniform Call Distribution	BSE
	NX - Queuing/UCD	BSE or CNS
	PB - Uniform Call Distribution	BSE
	SWB - Uniform Call Distribution Arrangement	BSE
	Qwest - Uniform Call Distribution	BSE

FEATURE OPERATION:

1. When an incoming call (to the Directory Number of the multiline hunt group) is received, hunting should begin at the start-hunt terminal and proceed as a circular hunt.

2. When an idle terminal is found, the call should be completed, and immediately (even before another call attempts to terminate) a new circular hunt should begin for an idle terminal. This hunt should begin at the terminal number after the one that the call was just completed. When an idle terminal is found, the hunt should stop and the idle terminal number should be stored as the start-hunt terminal for the next incoming call to the Directory Number (DN) of the multiline hunt group (MLHG). If no idle terminal is found after a complete circular hunt is made, the stored start-hunt DN should be the DN of the last completed call.

3. If an incoming call is not to the DN of the MLHG but to a DN associated with one of the terminals of the MLHG instead, the start-hunt terminal as defined above for Uniform Call Distribution should not be used. Instead, the incoming call should be directed to the terminal associated with the called DN directly. If the called DN terminal is busy, a circular hunt should begin at the called DN terminal and continue until an idle terminal is found. If none is found, the incoming call should be given busy treatment. In either case, the next incoming call to the MLHG DN uses a start-hunt number as determined by 2 above, which is unaffected by the call to a terminal's direct DN.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS25

2. In the 1A ESS and 5ESS switches, Call Waiting - Terminating and series completion cannot be assigned to lines with the UCD feature. In the DMS-100, the Universal Call Distribution feature is not compatible with Automatic

Call Back, Automatic Recall, Automatic Call Distribution, Bridged Night Number, Calling Number Delivery, Calling Number Delivery Blocking, Distributed Line Hunting, Distributed Number Hunting, Multiline Hunting, Preferential Hunting and Stop Hunt.

3. References:

   - GR-569 LSSGR: Multiline Hunt Service, FSD 01-02-0802 (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-TSY-000569 Issue 1 – no technical changes), see "uniform call distribution hunting."

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Multiline Hunt Group - UCD With Queuing (1082)

This feature provides the capability for a UCD multiline hunt group to be equipped with the queuing feature. The queuing feature provides a means for automatically queuing calls to a multiline hunt group when all hunting group terminations are busy.

Generic Name of ONA Service	Product Name	BSE or CNS
Multiline Hunt Group - UCD With Queuing	AM - Queuing	BSE
	BA – Multiline Hunt Group – UCD With Queuing	BSE
	BS - Multiline Hunt Queuing	BSE
	BS - Queuing (Access)	BSE
	NX - Queuing/UCD	BSE or CNS
	PB - Uniform Call Distribution With Queuing	BSE
	SWB - Queuing	BSE
	Qwest - Uniform Call Distribution	BSE

FEATURE OPERATION:

1. Calls made to a UCD multiline hunt group equipped with the queuing feature will complete immediately if there is an idle terminal in the UCD hunt group. However, if all terminals in the UCD hunt group are busy, the call is placed on queue and waits its turn to be served. If the delay announcements feature is active in the serving central office the calling party may receive silence, special tone, music or announcements if the call is not serviced within a customer specified length of time. The call that has been on queue the longest will be the first call served when a line becomes available. The customer determines the maximum number of calls that can be placed on queue. If the incoming call cannot be placed on queue, the calling party receives busy tone.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS25

2. In the 1A ESS and 5ESS switches, Call Waiting - Terminating and series completion cannot be assigned to lines of multiline hunt groups. The 5ESS and DMS-100 Queuing feature should not be assigned with Call Waiting - Terminating. In the DMS-100, the Universal Call Distribution feature is not compatible with Automatic Call Back, Automatic Recall, Automatic Call Distribution, Bridged Night Number, Calling Number Delivery, Calling Number Delivery Blocking, Distributed Line Hunting, Distributed Number Hunting, Multiline Hunting, Preferential Hunting and Stop Hunt.

3. References:

   - GR-569 LSSGR: Multiline Hunt Service, FSD 01-02-0802 (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-TSY-000569 Issue 1 – no technical changes).

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Name of Calling Party (1097)

Name of Calling Party is a terminating user feature that allows the subscriber to receive the name associated with the calling number prior to answering the call.

Name of Calling Party, or Calling party NAMe (CNAM) is an incremental feature functionality that adds calling name information to the existing "Calling Directory Number Delivery - via ICLID" service also described in the ONA Services User Guide.

When CNAM is assigned to the subscriber's line, the name associated with the calling number, along with the directory number of the calling party, the time of the call and the date are sent to, and displayed on, the called party's customer premises equipment (CPE) during the first long silent interval of the ringing cycle (between the first and second rings). If the calling party is outside the area in which the service works, the called party's CPE will receive an "0" which in most cases is displayed as "Out of Area" (actual display is the function of the CPE used).

Generic Name of ONA Service	Product Name	BSE or CNS
Name of Calling Party	AM - Caller ID With Name	CNS
	BA - Caller-ID Deluxe	CNS
	BS - Caller ID Deluxe	CNS
	NX - Caller ID	CNS

FEATURE OPERATION:

The customer must contact the telephone company to have the CNAM service activated. Once the translation changes have been made to the customer's line and the customer has installed the appropriate CPE, the name associated with the calling number, the calling number, and the date and time of call is automatically transmitted to the customer's CPE.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE10	5E8	BCS36

2. All Technological and Feature Interaction Considerations applicable to Calling Directory Number Delivery - via ICLID also apply to CNAM. Refer to those considerations in the Services Descriptions section of this User Guide.

3. A maximum of 15 characters is allowed for transmission of the calling party Directory Name.

4. If the incoming call originates from a customer provided or Telephone Company Public Telephone or a Telephone Company provided Semi-Public Telephone, the name information provided will always be "Pay Phone."

5. If the incoming call originates from a multi-line hunt group, the name and number transmitted will always be the main listed directory name and number of the hunt group, unless, facilities permitting, the lines are Telephone Number identified within the group.

6. If the incoming call originates from a caller who subscribes to "Distinctive Ringing - Terminating Screening" (described in the Services Descriptions section of this User Guide), the name and number transmitted will always be the main directory listing information rather than the "Distinctive Ringing - Terminating Screening" service listed name and number.

7. If the incoming call is from a caller served by a PBX, only the main listed name and number of the PBX will be transmitted and available for display.

8. Calling party information is not available on Operator handled calls.

9. References:

   - GR-1519: CCSNIS Supporting GR-1188 Calling Name Delivery, Issue 1, October 1994 (Component of FR-905)
   - GR-1188 LSSGR: CLASS[SM] Feature: Calling Name Delivery Generic Requirements (FSD 01-02-1070), (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-NWT-001188 Issue 1 & Bulletins 1 & 2), Issue 2 – December 2000.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

Reverse Billing On Circuit Switched Access (1083) *

Reverse Billing provides the ESP's client with the ability to make calls to the ESP without the ESP's client being billed for charges associated with the calls (e.g., message units, measured service charges, intraLATA toll), which might otherwise apply.

Generic Name of ONA Service	Product Name	BSE or CNS
Reverse Billing On Circuit Switched Access	BS - Uniform Access Number	BSE

FEATURE OPERATION:

The reverse billing feature provides the end user the ability to access the local Enhanced Service Provider (ESP) telephone number without incurring local message units or intraLATA toll. The Reverse Billing service is applicable to all calls terminating to an ESP's service provided the NPA/NXX for the ESP exists within the dial plan area.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS17

2. For a voice grade line circuit switched application, reverse billing is a function of the billing systems. The technology to provide reverse billing is dependent on two systems - the central office where the call originates must have recording capability, and the billing systems must be able to process the billing information and reverse the billing to the terminating telephone number. In order to make the billing systems' tasks less complex, a unique NXX must be assigned for the reverse billing telephone numbers. The unique NXX indicates to the billing system that calls placed to numbers in this NXX must be treated differently than normal calls. The switching equipment in each LATA must have the capability to code convert all seven or ten digits of the unique NXX to facilitate completion of the call to the ESP.

3. References: not applicable.

This service is associated with the Circuit Switched Line basic serving arrangement.

* Note that this name has been changed slightly, and the description has been modified so that it no longer includes packet, compared to the information published in the May 24, 1989 BOC ONA Special Report #5 and December 29, 1989 BSA Matrix Supplement documents. For information on the packet version of this service, see the service called "Reverse Charge Acceptance - Packet" in the packet services section of this document.

Selective Call Forwarding (1084)

Selective Call Forwarding (CLASS[SM]) allows the subscriber to specify a list of telephone numbers that will be forwarded to a remote station. When a call is received from one of the numbers on the list, the call will automatically be forwarded to the designated station. When a call is received from a number that is not on the list, the call will be terminated to the called party's line.

Generic Name of ONA Service	Product Name	BSE or CNS
Selective Call Forwarding	BA - Select Forward	CNS
	BS - Preferred Call Forwarding	CNS
	PB - Select Call Forwarding	CNS or BSE
	SWB - Selective Call Forwarding	CNS
	Qwest - Selective Call Forwarding	CNS

FEATURE OPERATION:

The customer must contact the telephone company to initiate Selective Call Forwarding service. A service order is required. The customer initiates control of the Selective Call Forwarding screening list contents as well as activation and deactivation of the service by dialing access codes as described below. Once the appropriate translations have been made to the customer's line the customer may activate, deactivate and/or use the service as follows. (Note: Prior to the 1A ESS 1AE10.2 generic, it was necessary for the 1A ESS Selective Call Forwarding customers to also subscribe to Call Forwarding Variable in order to activate the service.)

1. 1A ESS (Generic 1AE10.02 and later): To activate the Selective Call Forwarding service, the customer must go off-hook and dial *63 (1163 for rotary dial). The customer will then receive an announcement providing the following information:

   — The name of the service.

   — The telephone number the calls will be forwarded to.

   — The service is now active.

   — The number of entries on the list.

   — The instructions for creating/adding to the list; removing subscriber's entries from the list; reviewing the list.

   To deactivate the service, the customer must go off-hook and dial *83 (1183 for rotary dial). The customer will then receive an announcement providing the following information:

   — The name of the service.

   — The service is now off.

   — The number of entries on the list.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

— The instructions for removing any subscriber list entry; removing all subscriber entered numbers.

2. 5ESS and DMS-100: To activate or deactivate the Selective Call Forwarding service, the customer must go off-hook and dial either *63 or *83 (1163 or 1183 for rotary dial). Once either access code has been successfully entered, the customer should receive an announcement providing the following information:

   — The name of the service.

   — The telephone number the calls will be forwarded to.

   — The status of the service (active or inactive).

   — The number of entries on the list.

   — The instructions for creating/adding to the list, removing, reviewing the list, changing of service status (active to inactive, inactive to active).

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	**1A ESS**	**5ESS**	**DMS-100**
Earliest Generic Release	1AE10*	5E6	BCS31**

NOTE: * Available on an intraoffice basis with 1AE9.

** References to switching system generics that have not yet been released by the vendors are based on our current information about which features are planned for inclusion in those generic releases. If the vendors change the availability of any features for future generic releases that are referenced in this document, the availability of some services may be affected.

2. The maximum directory number list size is pre-determined by the Local Exchange Company on a Company basis and can range from 2 to 31.

3. The serving central office switch must be equipped with the appropriate CLASS[SM] Selective Call Forwarding software and hardware. In order for this service to work on an interoffice basis, both the originating and terminating switches must be equipped with the CLASS and Common Channel Signaling (CCS) SS7 software and hardware and the interoffice trunks must be converted to SS7. The remote directory number ("forward to" number) does not have to be in a switch in the CLASS Calling Area or in a switch equipped with CLASS or SS7.

4. This service is a "line" service and therefore cannot be assigned to subscribers with trunk terminations (i.e., PBX with DID). This service is also unavailable to customers with the following types of lines: multiparty, hotel/ motel, coin and coinless public, 1A ESS remote switching system lines (RSS), and Centrex attendant with console.

5. If the subscriber is served from a 1A ESS Generic 1AE10.02 and later switch, the subscriber no longer needs to have Call Forwarding Variable service in order for Selective Call Forwarding to work. However, even though the subscriber may have both Selective Call Forwarding (SCF) and Call Forwarding Variable (CFV) assigned to their line, they CANNOT have both services active at the same time. With the 1A ESS 1AE10.03 generic, the subscriber can have SCF and CFV services activated at the same time, if the Local Exchange Company equips their central offices accordingly.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

6. References:

   - GR-217 LSSGR: CLASS[SM] Feature: Selective Call Forwarding, FSD 01-02-1410 (A Module of LSSGR, FR-64), Issue 2, April 2002 (replaces TR-TSY-000217 Issue 2 & Revision 1 & Bulletin 2 & GR-217 Issue 1).

   - GR-220 LSSGR: CLASS[SM] Feature: Screening List Editing, FSD 30-28-0000 (A Module of LSSGR, FR-64), Issue 2, April 2002 (replaces TR-NWT-000220 Issue 3 & GR-220 Issue 1).

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

Selective Call Rejection (1085)

Selective Call Rejection (CLASS)[SM] provides the subscriber with the ability to block incoming calls from a pre-specified list of directory numbers. The subscriber to this feature builds a list of telephone numbers that they want automatically blocked. The pre-selected (blocked) directory numbers are routed to a standard central office announcement instead of the dialed number. Subscribers can also place the number of the last incoming call on their list, without having to know the telephone number, by dialing a special command code. However, this must be done PRIOR to receiving another call.

Generic Name of ONA Service	Product Name	BSE or CNS
Selective Call Rejection	AM - Call Screening	CNS
	BA - Call Block	CNS
	BS - Call Block	CNS
	PB - Call Block	CNS or BSE
	SWB - Call Blocker [SM]	CNS
	Qwest - Call Rejection	CNS

FEATURE OPERATION:

The customer must contact the local telephone company to initiate Selective Call Rejection service. A service order is required. The customer initiates control of the Selective Call Rejection screening list contents as well as activation and deactivation of the service by dialing access codes as described below. Once the appropriate translations have been made to the customer's line the customer may activate, deactivate and/or use the service as follows.

1. 1A ESS: To activate the Selective Call Rejection service, the customer must go off-hook and dial *60 (1160 for rotary dial). The customer will then receive an announcement providing the following information:

   — The name of the service.

   — The service is now active.

   — The number of entries on the list.

   — The instructions for adding the last incoming number to the list, adding known numbers to the list; removing subscriber entries from the list; reviewing the list.

   To deactivate the service, the customer must go off-hook and dial *80 (1180 for rotary dial). The customer will then receive an announcement providing the following information:

   — The name of the service.

   — The service is now off.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)
[SM] Call Blocker is a service mark of Southwestern Bell Telephone.

— The number of entries on the list.

— The instructions for removing any subscriber list entry; removing all subscriber entered numbers.

2. 5ESS and DMS-100: To activate or deactivate the Selective Call Rejection service, the customer must go off-hook and dial either *60 or *80 (1160 or 1180 for rotary dial). Once either access code has been successfully entered, the customer should receive an announcement providing the following information:

— The name of the service.

— The status of the service (active or inactive).

— The number of entries on the list.

— The instructions for adding the last incoming number to the list, adding removing, reviewing the list, changing of service status (active to inactive, inactive to active).

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	**1A ESS**	**5ESS**	**DMS-100**
Earliest Generic Release	1AE10*	5E6	BCS31**

NOTE: * Available on an intraoffice basis with 1AE9.

** References to switching system generics that have not yet been released by the vendors are based on our current information about which features are planned for inclusion in those generic releases. If the vendors change the availability of any features for future generic releases that are referenced in this document, the availability of some services may be affected.

2. The maximum list size is pre-determined by the telephone company on a company basis and can range from 2 to 31.

3. The serving central office switch must be equipped with the appropriate CLASS[SM] Selective Call Rejection software and hardware. In order for this service to work on an interoffice basis, both the originating and terminating switches must be equipped with the CLASS[SM] and Common Channel Signaling (CCS) SS7 software and hardware and the interoffice trunks must be converted to SS7.

4. This service is a "line" service and therefore cannot be assigned to subscribers with trunk terminations (i.e., PBX with DID). This service is also unavailable to customers with the following types of lines: multiparty, hotel/ motel, coin and coinless public, 1A ESS remote switching system lines (RSS), and Centrex attendant with console.

5. The announcement the rejected call is routed to is a telephone company recorded announcement (not customer changeable).

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

6. References:

   - GR-218 LSSGR: CLASS[SM] Feature: Selective Call Rejection, FSD 01-02-0760 (A Module of LSSGR, FR-64), Issue 2, April 2002 (replaces TR-TSY-000218 Issue 2 & Revision 1 & Bulletin 2 & GR-218 Issue 1).

   - GR-220 LSSGR: CLASS[SM] Feature: Screening List Editing, FSD 30-28-0000 (A Module of LSSGR, FR-64), Issue 2, April 2002 (replaces TR-NWT-000220 Issue 3 & GR-220 Issue 1).

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

[SM] *CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)*

Shared Speed Calling (1086)

Shared Speed Calling will permit an ESP's clients to access a speed calling list and to call an ESP by dialing only one (or two) digit(s) instead of seven or ten digits. The ESP controls the speed calling list and determines which telephone numbers that the clients will be able to access via shared speed calling as well as the abbreviated code assigned to each number. The ESP must order the service from the BOC before an ESP client can have access to the shared speed calling list. This is due to a technological requirement of the service design that requires that each ESP's client's line be associated in the switch software with the ESP-established list.

This service differs from Speed Calling in that it allows multiple customers (ESP clients) to easily and conveniently access their ESPs without the need for each ESP client to individually subscribe to Speed Calling on their line. Speed Calling is unique to individual customer lines and the telephone numbers associated with each abbreviated code on the list are determined by the individual subscriber to the service. As with Speed Calling, Shared Speed Calling is available using either one or two digit abbreviated codes. One digit allows one to eight abbreviated codes while two digit allows one to thirty abbreviated codes.

Generic Name of ONA Service	Product Name	BSE or CNS
Shared Speed Calling	BA - Shared Speed Calling	CNS
	PB - Network Speed Calling	CNS
	Qwest - Abbreviated Access/Activation (1 or 2 Digit)	CNS

FEATURE OPERATION:

1. To call any of the directory numbers assigned to a Shared Speed Call list the ESP or their clients perform the following operations:

   a. Listen for dial tone.

   b. Dial the one or two digit Shared Speed Call code assigned to the desired directory number or destination. After a four-second pause, the call is processed. (Callers from touchtone telephones can avoid the four-second pause by dialing # after the Speed Call code.)

2. To change any numbers or to add a number to the Shared Speed Call list, the following operations are performed by the ESP from their line:

   1. Listen for dial tone.

   2. Dial the applicable Shared Speed Call change code (typically three or four digits).

   3. After receipt of second dial tone, dial the Shared Speed Call code that is changing or being added and then dial the new directory number associated with the Shared Speed Call code. (If a fast busy tone is encountered the action must be repeated because the change did not occur.)

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. Only the ESP can control (i.e., change or add to) the list. The ESP must have an access line in the Central Office switch where the Shared Speed Call list is established. All clients must be in this same Central Office switch.

2. This feature is available to POTS subscribers in the following central office switches:

Switch Type	**1A ESS**	**5ESS**
Earliest Generic Release	1AE8A	5E2(2)

3. The capability may be limited to certain POTS classes of service. It is generally available to Centrex subscribers in all types of Central office switches offering Centrex service.

4. The maximum number of digits in the telephone number assigned to the Shared Speed Call code is 15 in the 1A ESS and 32 in the 5ESS.

5. Multiline subscribers can have Shared Speed Calling on each line if desired.

6. Shared Speed Calling can be used in conjunction with Three-Way Calling or Three-Way Call Transfer if the subscriber wishes to add to an established call someone who is on their Shared Speed Call list.

7. Subscribers with Shared Speed Calling (one-digit) can also have Speed Calling (two-digit) or Speed Calling (thirty number) on the same line. Subscribers with Shared Speed Calling (two-digit) can also have Shared Speed Calling (one-digit) or Speed Calling (eight number) on the same line.

8. References:

   - GR-570 LSSGR: Speed Calling, FSD 01-02-1101 (A Module of LSSGR, FR-64), Issue 1, June 2000, see "Shared Speed Calling" (replaces TR-TSY-000570 Issue 1 – no technical changes).

Single Number Access For Multiple Locations (1098)

Single Number Access for Multiple Locations allows subscribers with multiple locations to advertise a single 7-digit telephone number LATAwide. Calls to the subscriber's number are routed to the most appropriate location based on subscriber-selected parameters, such as originating geographic location, time-of-day, day-of-week, or percent distribution of calls.

Generic Name of ONA Service	Product Name	BSE or CNS
Single Number Access for Multiple Locations	BS – ZipCONNECT (Area Number Calling) *	CNS

FEATURE OPERATION:

Subscribers desiring the Single Number Access for Multiple Locations service must contact the telephone company to have the service established. They are assigned a 7-digit number in an NXX code dedicated for this service. Calls originating to the dedicated NXX are recognized as requiring special handling. AIN Release 0 offices send a query to the service control point (SCP) which determines the "real" (local telephone network number) terminating number based on the number dialed and the parameters selected by the subscriber. This information is transmitted back to the querying office, which uses the "real" terminating number to route the call. If the call originates in an office that is not AIN Release 0 capable but is SS7 capable, then the call, including the calling number, is routed to an office that can perform the SCP query and route the call. If the originating office is neither AIN Release 0 nor SS7 capable, it is routed to an AIN capable office without the calling number and treated as agreed upon by the telephone company and the subscriber.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	See Note	5E8	BCS35

Note: A 1AESS cannot access the SCP to translate the call, but if it is equipped with 1AE10 and SS7 capability, it can route the call to a 5ESS or DMS-100 for handling.

2. Feature operation is dependent on the type of central office switch in which the call originates, not the switch type that the subscriber is served by.

3. Calls are dialed on a 7-digit basis throughout the LATA. If toll charges are involved (if the 7-digit number is translated to a 10-digit intraLATA toll number), they are billed as agreed to by the telephone company and the subscriber.

4. Geographic routing will allow calls to be routed based on originating wire center, or on originating block group boundaries. Block groups are based on the U. S. Census Bureau-based geographical coordinates, and will allow subscribers to design their own service areas below the wire center level.

* Service is only available to existing BellSouth subscribers. This offering will be removed in Florida by July 2003, and will be grandfathered in the other 8 stated. The FCC has been requested (in 2002) to approve discontinuance of this service. Once all customers are removed and upon FCC approval, all tariffs will be deleted as appropriate.

5. Time-of-Day routing is based on the time the originating call is made.

6. Day-of-Week routing is based on which day of the week the calls are made.

7. Percent distribution routing allows the subscriber to distribute the call volumes going to each location, i.e., 20% to Location A, 30% to Location B, etc.

8. Default treatment will be specified for calls not mapped to a particular location, such as out of area calls, and calls without calling line identification delivered with the call.

9. Reference: Not available.

Speed Calling (1087)

Speed Calling (eight number) allows a subscriber to establish a connection to certain directory numbers by dialing one digit instead of seven to ten digits. The service has a limit of eight speed calling access codes (each single digit code is associated with a telephone number).

Speed Calling (thirty number) allows a subscriber to establish a connection to certain directory numbers by dialing two digits instead of seven to ten digits. The service has a limit of 30 speed calling access codes (each two digit code is associated with a telephone number).

The telephone numbers associated with access codes of a speed call list are determined by the client. The client has the ability to add or change the telephone numbers assigned to such codes through use of the client's station.

Generic Name of ONA Service	Product Name	BSE or CNS
Speed Calling	AM - Speed Calling	CNS
	BA - Speed Calling	CNS
	BS - Speed Calling	CNS
	NX - Speed Calling	CNS
	PB - Speed Calling (8 & 30 Number)	CNS
	SWB - Speed Calling	CNS
	Qwest - Speed Calling (8 Number)	CNS
	Qwest - Speed Calling (30 Number)	CNS

FEATURE OPERATION:

1. To call any of the directory numbers assigned to a Speed Call list, the subscriber performs the following operations:

    1. Listen for dial tone.

    2. Dial the one or two-digit Speed Call code assigned to the desired directory number. After a four-second pause, the call is processed. (Callers from touchtone telephones can avoid the four-second pause by dialing # after the Speed Call code.)

2. To change any numbers or to add a number to the Speed Call list, the following operations are performed from the subscriber's line:

    a. Listen for dial tone.

    b. Dial the applicable Speed Call change code (typically three or four digits).

    c. After receipt of second dial tone, dial the Speed Call code that is changing or being added and then dial the new directory number associated with the Speed Call code. (If a fast busy tone is encountered the action must be repeated because the change did not occur.)

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS17

2. The maximum number of digits in the telephone number assigned to the Speed Call code is 15 in the 1A ESS, 32 in the 5ESS and 15 in the DMS-100.

3. Multiline subscribers can have Speed Calling on each line if desired.

4. Speed Calling can be used in conjunction with Three-Way Calling or Three-Way Call Transfer if the subscriber wishes to add to an established call someone who is on their Speed Call list.

5. Subscribers with Speed Calling (eight-number) can also have Speed Calling (thirty-number) Shared Speed Calling (two-digit) on the same line. Subscribers with Speed Calling (thirty-number) can also have Speed Calling (eight-number) Shared Speed Calling (one-digit) on the same line.

6. References:

   - GR-570 LSSGR: Speed Calling, FSD 01-02-1101 (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-TSY-000570 Issue 1 – no technical changes).

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Tandem Routing (1088)

Tandem Routing provides for access by ESPs to the exchange network with trunk and/or line interfaces through tandem switches. This allows ESPs to interconnect with the network at a single point and be accessed by customers in a selected group of end offices, all of which subtend that tandem. In some jurisdictions, at the option of the ESP, calls from a particular end office may be blocked or forwarded to the ESP, allowing the ESP to create a custom services area from the LATA sector served by the tandem.

Generic Name of ONA Service	Product Name	BSE or CNS
Tandem Routing	AM - Tandem Routing	BSA *
	BA - Tandem Routing	BSE
	BS - Custom Service Areas	BSE
	NX - Tandem Routing	BSA *
	PB - Tandem Routing	BSA *
	Qwest - Tandem Routing	BSA *

FEATURE OPERATION:

Tandem translations supply data for routing calls over tandem trunks. Tandem trunks that are incoming from a tandem office or central office cannot terminate at a line or tone circuit in a local office, with the exception of a connection to reorder tone when all outgoing trunks are busy or a network blockage occurs. Instead, these trunks are switched to tandem completing trunks that are outgoing to a local office.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS19

2. All three switch types require specific generic software to configure the switch for tandem operation. An example of this is the Northern Telecom NTX386AA feature package, used in the DMS 100/200 to configure this switch for Access Tandem capabilities. This feature package enables access tandem translations and screening, trunking, treatments, and billing as well as various software support features. Because all offices do not contain the necessary feature packages for tandem trunking, the local exchange company must be contacted for specific geographic locations of the switches with this capability.

3. In some regional companies, this service may be limited to trunk side access services utilizing Feature Groups B and D protocol, or Feature Group D protocol only.

* For Ameritech, NYNEX, Pacific Bell and Qwest, this is met by an alternative of the Circuit Switched Trunk BSA.

4. References:

   - GR-540 LSSGR: Tandem Supplement (A Module of LSSGR, FR-64), Issue 2, March 1999 (Replaces TR-TSY-000540, Issue 2).

This service, if offered as a BSE, is associated with the Circuit Switched Trunk basic serving arrangement.

Three Way Call Transfer (1089)

Three Way Call Transfer provides the ESP who is on an established call with the ability to add another party to perform a three way conference. After establishing the conference, the ESP may drop their connection without disconnecting the remaining two parties. This action allows the ESP to transfer specific calls and free their line to initiate or receive another call.

Generic Name of ONA Service	Product Name	BSE or CNS
Three Way Call Transfer	AM - Three Way Call Transfer	BSE
	BA - Three-Way Call Transfer	BSE
	BS - User Transfer	BSE or CNS
	NX - Three Way Call	BSE
	PB - Call Transfer	BSE
	Qwest - Call Transfer	BSE

FEATURE OPERATION:

1. To transfer an established call: Advise first party, then depress the receiver button (recall dial tone is heard); dial number of the third party (hear ringing); announce the call, depress the receiver button to add on the first party, then hang up.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A*	5E5*	BCS29

* Note that on the 1A ESS and 5ESS, this is made available by placing customers in a Centrex Common Block.

2. An additional option for the ESP with Centrex is to allow calls to be transferred outside of the Centrex environment. This optional feature is known as DID/DOD Transfer.

3. Call Forwarding Variable is compatible with Three Way Call Transfer service.

4. Call Hold and Three Way Call Transfer can be assigned to the same line.

5. Call Pickup and Three Way Call Transfer can be assigned to the same line.

6. Speed Calling and Three Way Call Transfer can be assigned to the same line.

7. Three Way Call Transfer may be assigned to either or both parties on a Two-Party Line.

8. Three Way Call Transfer may not be provided on the following lines:

   - Coin Lines
   - Denied Originating Lines
   - Four and Eight Party Lines
   - PBX Lines
   - Hotel/Motel Calls Routed to TSPS

9. References:

   - GR-579 LSSGR: Add-On Transfer and Conference Calling Features, FSD 01-02-1305 (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-TSY-000579 Issue 1 – no technical changes).

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Uniform 7 Digit Access Number - Remote Call Forwarding (1090)

This capability provides a uniform seven-digit telephone number which can be dialed without an NPA prefix and is remotely call forwarded to an ESP, thereby giving an appearance of a local presence. The subscriber (ESP) may pay all end user customer usage charges and can specify a custom routing arrangement with either a central location or multiple locations throughout a LATA.

This capability uses Remote Call Forwarding technology, simulated facility groups and a dedicated NXX code. Custom Routing is an added feature.

Generic Name of ONA Service	Product Name	BSE or CNS
Uniform 7 Digit Access Number - Remote Call Forwarding	BA - One Number Service	BSE

FEATURE OPERATION:

To reach a subscriber, a client dials the seven digit number assigned by the telephone company. The call is routed to the central office switch where the translations for the capability reside. From there the call is directed to the destination specified by the subscriber. The number of simultaneous calls that can be directed to a destination is controlled by a Simulated Facility Group. Calls are completed via the Public Switched Network.

To reach a subscriber with Custom Routing, a client dials the seven digit number assigned by the telephone company. The call is translated in the originating switch and directed to the destination specified by the subscriber. Since the translations are done in each originating switch, each switch can direct calls to a different destination. A Simulated Facilities Group is established in each end office switch with Custom Routing to limit the number of simultaneous calls that can be forwarded from that switch. Calls originating in switches without translations for this capability are routed to an announcement. Calls are completed via the Public Switched Network.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS19

2. To establish this capability and to change an established arrangement for this capability requires a service order.

3. Subscribers desiring the Custom Routing option must specify the central office switches they wish to serve. Calls originating in an area that has not been designated as part of a Custom Routing area will receive a vacant code announcement.

4. References:

   - Reference for Remote Call Forwarding: GR-581 LSSGR: Remote Call Forwarding, FSD 01-02-1402 (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-TSY-000581 Issue 1 – no technical changes).

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Uniform 7 Digit Access Number via Overlay Networking (1091)

This feature provides the ESP with a uniform 7 digit directory number for use (for example) across a LATA, state or regional company. The clients will be able to dial one number from all locations within the specified area(s), and the calls will be routed to a specified ESP location within each LATA. Uniform Access Number is the ability of an ESP to use the same 7 digit telephone number in multiple service areas, possibly region-wide. All numbers used in Uniform Access Number will come from an NXX (or NXXs) especially designated for ESP use.

Generic Name of ONA Service	Product Name	BSE or CNS
Uniform 7 Digit Access Number via Overlay Networking	BS - Uniform Access Numbers for Business Lines	BSE
	NX - 900 Access Service	BSE

FEATURE OPERATION:

The feature is supported by trunking architecture that could include direct and tandem switching center routing to the called ESP. Future routing plans will include Common Channel Signaling (SS7) technology.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. No specific vendor software or features are required. Specific telephone company architecture, capabilities and operation could vary.

2. References:

   - No requirements reference available.

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Warm Line (1092)

The warm line capability is a Central Office switch based automatic dialing feature.

If an ESP's client with a warm line capability goes off-hook and commences dialing within the time delay period, the call will proceed normally as dialed. If dialing has not started before the end of the time delay period, a stored number is automatically dialed.

Generic Name of ONA Service	Product Name	BSE or CNS
Warm Line	AM - Easy Call	CNS
	BA - Warm Line	CNS
	BS - Warm Line	CNS
	NX - Warm Line	BSE or CNS
	PB - Warm Line	CNS
	SWB - Warm Line	CNS
	Qwest - Warm Line	CNS

FEATURE OPERATION:

1. A subscriber of this service, upon going off-hook to initiate an outgoing call has the option to either:
   a. Dial the call in the normal manner or
   b. Wait for the prespecified time delay period and have the call automatically dialed to a single predetermined number or
   c. If calling from a touchtone phone, dial the # to immediately activate the automatic dialing.
2. The service, including the time delay interval and the predetermined number, is initially activated via a service order with the telephone company.
3. Subsequent changes to the time delay interval may only be made via a telephone company service order. Changes to the predetermined number may be made via a telephone company service order or, as an option, be made from the subscriber's line in the following manner:
   a. Listen for dial tone.
   b. Dial a telephone company assigned update code and receive second dial tone after a four second pause (subscribers with touchtone lines can avoid this pause by dialing # after the update code).
   c. Dial the new number. After a short time-out period, the new number will be active.

If the above-described option is available, the service can be deactivated by following the same procedure but not dialing in a new number. To reactivate the service, the subscriber would again follow the above-described procedure and must re-enter the predetermined number.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	**DMS-100**
Earliest Generic Release	BCS17

2. The predetermined telephone number can be any number normally dialable from the subscriber's line.

3. The time delay period is specified on a per line basis and can range from 0 to 20 seconds (a usual value would be 4 or 5 seconds).

4. Incoming calls are unaffected by this service.

5. A line with this service cannot have Hot Line service.

6. Warm Line can be used in conjunction with Three Way Calling or Three Way Call Transfer if the subscriber wishes to add the predetermined number to an established call.

7. No LSSGR reference available.

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

2. Technical Descriptions for Packet Switched Serving Arrangements

Call Detail Recording Reports (Packet) (1003)

This service will provide the ESP with a data record of all calls made to their telephone number. The record will include called and calling NTN (Network Terminal Number), date, time of day, number of segments and the duration of the call.

The call details will not be delivered in real time, but as a paper or magnetic tape output. The technology to provide Call Detail Recording is resident in two systems: first, the packet switch where the call originates must have recording capability; and second, the BOC's data processing system must be able to sort the recording information and extract the call details on calls made to the ESP's called number.

Generic Name of ONA Service	Product Name	BSE or CNS
Call Detail Recording Reports (Packet)	BA - Monthly Detailed Connection File	BSE
	NX - Call Detail Recording Reports-Packet	BSE or CNS
	PB - Call Detail Recording Reports	*
	SWB - Reports	BSE
	Qwest - Access Service Billing Information	BSE

FEATURE OPERATION:

See above description.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. Two reports may be provided either as paper or magnetic tape output, the Summary Report or the Detailed Report. The two reports may be sorted by three key elements:

   — NUI - Network User Identification

   — Calling NTN (Network Terminal Number)

   — Called NTN (Network Terminal Number)

2. The actual information and report format may vary by company.

3. References:

   - GR-301 Public Packet Switched Network Generic Requirements (PPSNGR), Issue 2, December 1997 (replaces TR-TSY-301, Issue 2).

This service, if offered as a BSE, is associated with the Packet Switched X.25 and X.75 basic serving arrangements.

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* Pacific Bell does not consider "paper or magnetic tape output" as a Basic Service Element. Pacific Bell does and will continue to provide call detail information to its customers.

Call Redirection - Packet (1004)

Call Redirection is an optional intraLATA Public Packet Switched Network (PPSN) feature that allows the network to automatically redirect calls to a predefined backup DTE (Data Terminal Equipment) under specified conditions. The primary DTE may designate a list of secondary DTEs called a back-up list. The network may be able to search the list in sequence until a connection can be established.

Generic Name of ONA Service	Product Name	BSE or CNS
Call Redirection - Packet	AM - Call Redirection	BSE
	BA - Call Redirection	BSE
	BS - Call Redirection	BSE or CNS
	NX - Call Redirect	BSE or CNS
	PB - DTE Backup	BSE
	SWB - Packet Call Redirection	BSE
	Qwest - Backup/Redirection	BSE

FEATURE OPERATION:

The PPSN will provide the calling clients DTE/CPE with the address and reason for redirection of the call to a secondary DTE. The network will also provide the secondary DTE with data in the incoming call packet as to why the call was forwarded and the address of the primary DTE.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. The Packet Switch, Access Concentrator or ISDN Packet Handling Function should support X.25 direct access interface.

2. LEC ISDN interface to PPSN should support recommendation X.75' of the International Telecommunication Union-Telecommunication Standardization Sector (ITU-TS) [formerly CCITT].

3. PPSN supports both individual and hunt group DTE access. Call Redirection applies to all addresses associated with subscriber access.

4. Call Redirection is limited to interfaces within a single LATA.

5. References:

   - GR-301 Public Packet Switched Network Generic Requirements (PPSNGR), Issue 2, December 1997 (replaces TR-TSY-301, Issue 2).

   - TR-NWT-001249, X.25 Call Redirection and Call Deflection Generic Requirements, Issue 1, December 1992.

This service, if offered as a BSE, may be associated with the Packet Switched X.25 and X.75 basic serving arrangements.

Closed User Groups - Packet (1005)

Closed User Group (CUG) is a Public Packet Switched Network feature that controls communication between Data Terminal Equipment (DTEs) belonging to the same CUG. Various CUG feature options are designated by the user such as:

- Incoming Calls Barred With CUG, allows a member of a CUG to originate calls to other members of the CUG, but cannot receive incoming calls.
- CUG With Incoming Access, allows a member of a CUG to receive incoming calls from any DTE not in the CUG.
- Outgoing Calls Barred With CUG, allows a member of a CUG to receive calls from other members of that CUG, but cannot originate any calls.
- CUG With Outgoing Access, allows a member of a CUG to make outgoing calls to any DTE.

A DTE can be a member of more than one CUG.

Generic Name of ONA Service	Product Name	BSE or CNS
Closed User Groups - Packet	AM - Closed User Group	BSE
	AM - Closed User Group	CNS
	BA - Closed User Groups	BSE or CNS
	BS - Closed User Group	BSE or CNS
	NX - Closed User Group	BSE or CNS
	PB - Closed User Group	BSE
	SWB - Closed User Group	BSE
	Qwest - Closed User Group	BSE

FEATURE OPERATION:

Closed User Groups provide a mechanism for controlling communication that is defined by the client/user when the service is requested. A preferential CUG may be chosen at subscription and the preferential CUG will automatically be selected if a specific CUG is not designated in the call request packet. Screening of the CUG may be performed at the originating and terminating interfaces as well as the PPSN X.75 interface. The call request is cleared if found invalid at any screening point.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. The PPSN and ISDN Packet Handling Facility (PHF) should be capable of supporting more than 100 CUGs on an X.25 interface.
2. The PPSN Access Concentrator should be capable of supporting up to 10 CUGs on an X.25 interface.
3. The PPSN X.75 interface should support 100 CUG codes.

4. References:

   - GR-301 Public Packet Switched Network Generic Requirements (PPSNGR), Issue 2, December 1997 (replaces TR-TSY-301, Issue 2).

This service, if offered as a BSE, is associated with the Packet Switched X.25 and X.75 basic serving arrangements.

Direct Call - Packet (1006)

Direct Call is an optional Public Packet Switched Network (PPSN) feature which enables the calling Data Terminal Equipment (DTE) to automatically initiate a call request without supplying the called destination address.

Generic Name of ONA Service	Product Name	BSE or CNS
Direct Call - Packet	AM - Packet - Direct Call	CNS
	BA - Auto Call Ports	CNS
	BS - Direct Call	CNS or BSE
	NX - Call Request	BSE or CNS
	NX - Direct Call	BSE or CNS
	PB - Direct Call	CNS
	SWB - Packet Direct Call	CNS
	Qwest - Auto Call	CNS

FEATURE OPERATION:

The Direct Call feature allows the PPSN Access Concentrator (AC), or ISDN Packet Handling Facility (PHF) to set up calls to a presubscribed address with minimal input from the user. The presubscribed address is established by the customer at the time the service is provisioned. This address, which is assigned a logical channel number, is used in an originating call request whenever no called address is provided by the calling DTE.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. The PPSN Access Concentrator should support X.25 direct access and dial in interfaces.

2. The PPSN Access Concentrator should support asynchronous direct access and dial in interfaces.

3. The ISDN Packet Handling Facility (PHF) should support the X.25 standard interface and future protocol requirements.

4. The ISDN default throughput class value is 9600 bps for all X.25 interfaces. The range of throughput class values that should be supported on all ISDN X.25 interfaces is: 75, 150, 300, 600, 1200, 2400, 4800, and 9600 bps. For B-channel and 64 kbps D-channel interfaces, the following throughput class values should be supported in addition: 19.2, 48, 56 and 64 kbps (the last two values as soon as codepoints are assigned).

5. References:

   - GR-301 Public Packet Switched Network Generic Requirements (PPSNGR), Issue 2, December 1997 (replaces TR-TSY-301, Issue 2).

   - International Telecommunication Union-Telecommunication Standardization Sector (ITU-TS) [formerly CCITT] 1980, 1984 and 1988 recommendations for X.25 and asynchronous interface requirements.

This service, if offered as a BSE, is associated with the Packet Switched X.25 basic serving arrangement.

Fast Select Acceptance - Packet (1007)

Fast Select Acceptance is an optional feature which works in conjunction with the Fast Select Request facility. This capability allows the called Data Terminal Equipment (DTE) to receive user data in the call setup packet. The terminating (called) DTE must be subscribed to the Fast Select Acceptance facility to receive Fast Select call. If the terminating DTE does not subscribe to Fast Select Acceptance, the Data Circuit Terminal Equipment (DCE) would respond to the Fast Select Request call of the origination DTE with a clear indication packet, indicating that Fast Select Acceptance is not subscribed to.

Generic Name of ONA Service	Product Name	BSE or CNS
Fast Select Acceptance - Packet	AM - Fast Select Acceptance	BSE
	BA - Fast Select Accept	BSE
	BS - Fast Select	BSE or CNS
	NX - Fast Select Accept	BSE or CNS
	PB - Fast Select Acceptance	BSE or CNS
	SWB - Fast Select	BSE
	Qwest - Fast Select Acceptance	BSE

FEATURE OPERATION:

The Fast Select Acceptance feature permits the calling DTE to send up to 128 octets of user data in the call setup packet to a called DTE subscribed to the Fast Select Acceptance feature. The service is available in a restricted and unrestricted mode. In the unrestricted mode the called DTE has an option to accept the call request and exchange data packets. In the restricted mode the call request is cleared and only data associated with call setup and clearing is exchanged.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is defined in the International Telecommunication Union-Telecommunication Standardization Sector (ITU-TS) [formerly CCITT] X.25, X.75 and X.75' utilities as always required.

2. The PPSN Access Concentrator (AC) should support X.25 direct access and dial-in interfaces.

3. The ISDN Packet Handling Facility should support the X.25 direct access interface to the user and the X.75' interface to the PPSN.

4. References:

   - GR-301 Public Packet Switched Network Generic Requirements (PPSNGR), Issue 2, December 1997 (replaces TR-TSY-301, Issue 2).

This service, if offered as a BSE, is associated with the Packet Switched X.25 and X.75 basic serving arrangements.

Fast Select Request - Packet (1008)

Fast Select Request is a Public Packet Switched Network PPSN optional per-call feature that allows user data to be included in the originating call request packet sent from the calling Data Terminal Equipment (DTE) to the called DTE. The called or terminating DTE must be subscribed to the Fast Select Acceptance facility to receive Fast Select Request calls.

Generic Name of ONA Service	Product Name	BSE or CNS
Fast Select Request - Packet	AM - Fast Select	CNS
	BA - Fast Select Acceptance	CNS
	BS - Fast Select	BSE or CNS
	NX - Fast Select Request	BSE or CNS
	PB - Fast Select Initiate	BSE or CNS
	SWB - Fast Select	BSE
	Qwest - Fast Select Acceptance	BSE

FEATURE OPERATION:

The Fast Select Request service permits the calling DTE to send up to 128 octets of user data in X.25 call setup packets. The service can be provided in a restricted and unrestricted mode. In the unrestricted mode the called DTE has an option to accept the call request and exchange data packets. In the restricted mode the call request is cleared and only data associated with call setup and clearing is exchanged.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is defined in the International Telecommunication Union-Telecommunication Standardization Sector [formerly CCITT] X.25, X.75 and X.75' utilities as always required.

2. The PPSN Access Concentrator (AC) should support X.25 direct access and dial-in interfaces.

3. The ISDN Packet Handling Facility should support the X.25 direct access interface to the user and the X.75' interface to the PPSN.

4. References:

   - GR-301 Public Packet Switched Network Generic Requirements (PPSNGR), Issue 2, December 1997 (replaces TR-TSY-301, Issue 2).

This service, if offered as a BSE, may be associated with the Packet Switched X.25 and X.75 basic serving arrangements.

Hunt Groups - Packet (1009)

Hunt Groups is an optional subscription Public Packet Switched Network (PPSN) feature which allows a subscriber to associate a single address with a group of asynchronous or X.25 direct interfaces. Incoming calls routed to the group address are distributed based on the type of hunting requested by the subscriber. The PPSN Hunt Group feature may vary in operation and capabilities provided by specific packet switch vendors.

Generic Name of ONA Service	Product Name	BSE or CNS
Hunt Groups - Packet	AM - Hunt Groups	BSE
	BA - Multiple Channel Hunt Groups	BSE
	BS - Hunt Group	BSE or CNS
	NX - Hunting	BSE or CNS
	PB - Hunt Group (INT/EXT)	BSE
	SWB - Packet Hunt Group	BSE
	Qwest - Multiple Port Hunt Group	BSE

FEATURE OPERATION:

The PPSN Access Concentrator (AC) or ISDN Packet Handling Facility (PHF) will provide as a subscription option a hunt group capability that distributes incoming calls to a single packet network address. Three hunting arrangements that may be provided by packet vendors are:

— Sequential Hunt - all calls are delivered to the first access interface. If busy, calls will be delivered to the second interface. If that interface is busy, calls will be delivered to the third, and so on until the call is completed. If all sequential access interfaces are busy, the call will be cleared.

— Uniform Hunt - hunting arrangement keeps track of the last incoming call and delivers the next call to the next interface on the hunt list. The call is cleared when all interfaces are busy.

— Load Sharing Hunt - the user specifies the number of calls per interface before moving to the next address. If the last interface is busy the process repeats from the first address on the list.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. The PPSN Access Concentrator (AC) should support asynchronous and X.25 direct access interfaces.

2. The ISDN Packet Handling Facility (PHF) should support X.25 direct access interfaces.

3. The AC should support at least ten X.25 direct access interfaces.

4. References:

   - GR-301 Public Packet Switched Network Generic Requirements (PPSNGR), Issue 2, December 1997 (replaces TR-TSY-301, Issue 2).

This service, if offered as a BSE, may be associated with the Packet Switched X.25 and X.75 basic serving arrangements.

Menu Access Translator - Gateway (1010)

Gateway Service is an optional Public Packet Switched Network (PPSN) service that provides a directory of information providers.

Generic Name of ONA Service	Product Name	BSE or CNS
Menu Access Translator - Gateway	Qwest - Community Link	BSE

FEATURE OPERATION:

The PPSN Access Concentrator (AC) or ISDN Packet Handling Facility (PHF) should provide the user with an abbreviated address for ESPs listed in the Gateway. Upon selection of the desired address, the Gateway will set up a call and route the calling DTE (Data Terminal Equipment) or dialup computer to the ESP. Service capability and details of operation will vary in each regional Bell Operating Company.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. The PPSN Access Concentrator (AC) should support X.25 and asynchronous direct and dialup interfaces.

2. The ISDN Packet Handling Facility (PHF) should support X.25 direct access interface to the user and X.75 to the PPSN.

3. The PPSN should support X.75 to the IC/ESP.

4. References:

   - GR-301 Public Packet Switched Network Generic Requirements (PPSNGR), Issue 2, December 1997 (replaces TR-TSY-301, Issue 2).

This service, if offered as a BSE, is associated with the Packet Switched X.25 and X.75 basic serving arrangements.

Message Waiting Indicator - Packet Access (1011)

This capability allows an ESP to indicate to its subscriber that a message is waiting for retrieval. With this capability, the ESP can activate/deactivate an audible signal, e.g., stutter dial tone, on the ESP's client's line. This capability provides the ESP access to the MWI function in many end offices via dialup or dedicated access to the LEC packet switched network. The packet switched network will deliver the message waiting indicator activation/deactivation request to the ESP's client's end office.

Generic Name of ONA Service	Product Name	BSE or CNS
Message Waiting Indicator - Packet Access	SWB - Digital Customer Alerting	BSE

FEATURE OPERATION:

This capability allows packet switched access to the central office Simplified Message Desk Interface (SMDI) feature for providing ESP client delivery of the Message Waiting Indication (MWI) activation and deactivation messages for stutter dial tone. Access is made to the SMDI port through the public packet switched network.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. The SMDI feature is available in the following central office switches:

Switch Type	5ESS	DMS-100
Earliest Generic Release	5E4.2	BCS30

2. This capability could be used in conjunction with services Call Forwarding - Busy Line & Call Forwarding - Don't Answer and Direct Inward Dialing. Due to the limitation of central office switches which can be equipped with SMDI, this capability will be offered only in selected 5ESS and DMS-100 equipped serving offices.

This service, if offered as a BSE, is associated with the Packet Switched X.25 and X.75 basic serving arrangements.

Preselection for Data Services (1013)

Preselection for Data Services is an optional International Telecommunication Union-Telecommunication Standardization Sector (ITU-TS) [formerly CCITT] defined Public Packet Switched Network (PPSN) per call subscription feature that provides the user with the ability to select a preferred Interconnect Carrier (IC) on internetwork/interLATA calls. This feature will automatically select an IC when the calling DTE (Data Terminal Equipment) does not identify the Data Network Identification Code (DNIC) of the called IC in the Recognized Private Operating Authority (RPOA) field.

Generic Name of ONA Service	Product Name	BSE or CNS
Preselection for Data Services	BA - RPOA Preselection	BSE or CNS
	BS - RPOA Preselect	BSE or CNS
	NX – Access Concentrator	BSE or CNS
	NX - RPOA Preselection	BSE or CNS
	PB - IC/VAN Preselection	BSE or CNS
	SWB - RPOA Preselection	CNS

FEATURE OPERATION:

The PPSN Access Concentrator (AC) and ISDN Packet Handling Facility (PHF) should provide the capability for an originating DTE user to select a preferred IC at subscription. The AC and PHF should access the preselected DNIC/ INIC from the subscriber's profile and route the call to the IC over an X.75 interface.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. The PPSN AC should support asynchronous and X.25 direct or dialup interfaces.

2. The ISDN PHF should support X.25 direct interfaces.

3. References:

   - GR-301 Public Packet Switched Network Generic Requirements (PPSNGR), Issue 2, December 1997 (replaces TR-TSY-301, Issue 2).

This service, if offered as a BSE, is associated with the Packet Switched X.25 and X.75 basic serving arrangements.

Reverse Charge Acceptance - Packet (1014)

Reverse Charge Acceptance is an optional per-call Public Packet Switched Network (PPSN) subscription feature that allows a call from an originating Data Terminal Equipment (DTE) to be charged to the terminating DTE. Upon receiving a reverse charge indication the incoming DTE may accept or reject the call.

Generic Name of ONA Service	Product Name	BSE or CNS
Reverse Charge Acceptance - Packet	AM - Reverse Billing	BSE
	BA - Reverse Charge Acceptance	BSE
	BS - Reverse Charging	BSE or CNS
	NX - Reverse Charge Acceptance	BSE or CNS
	PB - Reverse Charge Acceptance	BSE
	SWB - Reverse Charge Acceptance	BSE
	Qwest - Reverse Charge Acceptance	BSE

FEATURE OPERATION:

The PPSN Data Circuit Terminating Equipment (DCE) and the ISDN Packet Handling Function (PHF) should deliver the reverse charging call request to the called DTE/DCE or CPE/PHF only when the interface is configured for reverse charging, otherwise the call is cleared. A Network User Identification (NUI) parameter may be signaled in the call accept packet.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. Reverse billing for the packet charges is allowed by assigning the packet feature "Reverse Charge Acceptance" to the ESP's voice grade line circuit switched termination on the Packet Switch.

2. The reverse charging acceptance allows the X.25 ESP to accept their end users' applicable packet charges on calls that their customers initiate with a billing designation of the terminating Data Terminal Equipment (DTE). During the call setup, the originating DTE signals that reverse charging is being requested by setting the reverse charging facility field in the call request packet. This is done on a per call basis. If the terminating DTE subscribes to the reverse charge acceptance service, then the terminating DTE will receive the associated call packet with the reverse charging field set. If the terminating customer does not subscribe to the reverse charging acceptance service, the call will be cleared and the originating DTE will receive a response indicating that the reverse charge acceptance is not an acceptable option.

3. References:

   - GR-301 Public Packet Switched Network Generic Requirements (PPSNGR), Issue 2, December 1997 (replaces TR-TSY-301, Issue 2).

This service, if offered as a BSE, may be associated with the Packet Switched X.25 and X.75 basic serving arrangements.

3. Technical Descriptions for Dedicated Access Arrangements

Access To Clear Channel Transmission (1026)

This capability provides for 64 Kbps clear channel transmission on 1.544 Mbps dedicated lines.

Generic Name of ONA Service	Product Name	BSE or CNS
Access To Clear Channel Transmission	AM - Access To Clear Channel Conditioning	BSE
	BA - Clear Channel Capability	BSE
	BS - Access To Clear Channel Transmission	BSA *
	NX - Clear Channel Capability	BSE
	PB - Access To Clear Channel Transmission	BSE
	SWB - Clear Channel Capability On 1.544 Mbps	BSE
	Qwest - Clear Channel Capability	BSE

FEATURE OPERATION:

This service offers 64 Kbps channel capacity on a dedicated point-to-point 1.544 Mbps high capacity circuit between two customer-designated premises. It allows a customer to transport an all-zero octet over a DS1/1.544 Mbps high capacity channel, providing an available combined maximum 1.536 Mbps data rate. This arrangement requires the customer signal at the channel interface to conform to Bipolar with eight (8) Zero Substitution (B8ZS) line code as described in Technical References TR-NPL-000054 and TA-TSY-000342.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This service requires the customer to obtain a dedicated 1.544 Mbps point-to-point circuit for transport of multiple 64 Kbps channels and is subject to the availability of facilities.

2. References:

   - GR-54 DS1 High-Capacity Digital Service End User Metallic Interface Specifications, Issue 1, December 1995 (replaces TR-NPL-000054, Issue 1).

   - GR-342 High-Capacity Digital Special Access Service Transmission Parameter Limits and Interface Combinations, Issue 1, December 1995 (replaces TR-INS-000342, Issue 1).

   - Pacific Bell document PUB L-780077 Service Description and Interface Requirements for Alternate Access Arrangements to Pacific Bell/Nevada Bell Digital Data Services, Issue 3, September 1993.

   - Qwest publication 77323 DS-1 Clear Channel Capability, Issue B, June 1989.

This service is associated with the Dedicated High Capacity Digital (1.544 Mbps) basic serving arrangement.

* BellSouth will offer this as a BSA alternative.

Access To Operations Support Systems Information (1027)

This service will offer the ESPs a common, mechanized presentation system for access to Network Management products, such as network reconfiguration, while also providing customer access to internal operations support systems for additional information and control of their network.

Access to this service will be through a customer provided terminal, with the choice of dial access or dedicated private line. This service will provide a secure and user friendly interface to the customers in providing capabilities and support in some or all of the following areas of service management: (1) Administration, (2) Security, (3) Performance, (4) Fault Management, (5) Reconfiguration, and (6) Accounting.

Generic Name of ONA Service	Product Name	BSE or CNS
Access To Operations Support Systems Information	BS - Administrative Management Service (AMS)	BSE or CNS

FEATURE OPERATION:

The customer will be able to access a common, mechanized presentation system on either a dial-up or dedicated basis. It will allow the customer access to information from selected telephone company administrative Operations Support Systems through a secure gateway and provide basic, integrated access to other existing network management products.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is independent of central office switch type.

2. References:

    - BellSouth technical reference TR 73531 Interfaces Between Miscellaneous Control and Status Functions of BellSouth SPCS Central Offices and Customer Premises Equipment, May 1989.

This service, if offered as a BSE, is associated with the Dedicated Digital (< 64 kbps) basic serving arrangement.

Automatic Protection Switching (1028)

Automatic Protection Switching provides the ability to monitor a non-switched facility between the ESP premises and the wire center serving the premises and to automatically switch to a spare facility if the performance of the original facility degrades or fails. It requires compatible equipment at both the ESP premises and the serving wire center.

Generic Name of ONA Service	Product Name	BSE or CNS
Automatic Protection Switching	AM - Automatic Loop Transfer	BSE
	BA - Automatic Loop Transfer	BSE
	BS - Automatic Protection Switching	BSE or CNS
	NX - Automatic Loop Transfer	BSE
	PB - Automatic Loop Transfer	BSE
	PB - Digital Data Service	BSE
	SWB - Automatic Loop Transfer	BSE
	Qwest - Automatic Loop Transfer	BSE

FEATURE OPERATION:

Automatic Protection Switching (APS) can be offered in two configurations. It can be offered as a stand alone APS for use with T1 carrier or as DS1 APS incorporated into a DS3/1 multiplexer unit.

The stand alone unit, in conjunction with an identical unit at the opposite end of the T1 carrier facility to be protected, switches from the primary T1 carrier facility to a standby facility upon detection of a loss of the 1.544 Mbps signal or of an unacceptable Bit Error rate. There are two T1/1.544 Mbps inputs from the line side of the unit, a primary input and the standby input. The inputs normally terminate on a cross connect device and are connected to the DS1 Access Link carrier facilities between the Serving Wire Center and the Customer Premises.

There is one 1.544 Mbps output port on the APS unit. In the central office it will be terminated on a digital cross connect frame for interconnection with other DS1 facility terminations or switch appearances. On a customer premises, it will be terminated on a standard Network Interface.

The DS1 APS method is accomplished by means of circuitry contained within the DS3/1 multiplexer. The low speed DS1 cards can have an optional APS capability on a DS3 basis. Some levels of protection are 1 for 4 and 1 for 7, depending upon the manufacturer of the multiplexer unit. This equipment is part of a DS3 or higher level transmission system and cannot be applied to metallic-based T1 carrier. The facility side DS1 is internal to the multiplexer. The DS1 output of the multiplexer is terminated on a DS1 cross connect frame in the Serving Wire Center.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This capability must be deployed on a circuit by circuit basis when offered in a stand-alone configuration.

2. There is no feature interaction.

3. References:

- GR-474 OTGR Section 4: Network Maintenance: Alarm and Control for Network Elements (A Module of OTGR, FR-439), Issue 1, December 1997 (replaces TR-NWT-000474, Issue 4)
- GR-833 OTGR: Network Maintenance: Network Element and Transport Surveillance Messages, Issue 2, November 1996, Issue 3, February 1999, Issue 4, June 2000, Issue 5, August 2004, component of FR-482 OTGR Section 12.0: Operations Applications Messages (replaces TR-NWT-000833, Issue 5)
- TA-TSY-000435 DS1 Automatic Facility Protection Switching (AFPS) Feature For Digital Terminal System Requirements and Objectives, Issue 1, February 1987
- TR-TSY-000238 Digital Channel Bank Dual-Tone Multifrequency (DTMF) Code Select Signaling Channel Unit, Issue 1, December 1986
- SR-NWT-001756 Automatic Protection Switching for SONET, Issue 1, October 1990

This service, if offered as a BSE, may be associated with the Dedicated Digital (< 64 kbps), Dedicated High Capacity Digital (1.544 Mbps) and Dedicated High Capacity Digital (> 1.544 Mbps) basic serving arrangements.